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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/429,920	10/29/1999	ATSUSHI WATANABE	392.1666/JDH	6526

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EXAMINER

LU, TOM Y

ART UNIT	PAPER NUMBER
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2621

DATE MAILED: 10/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/429,920

Applicant(s)

WATANABE ET AL.

Examiner

Tom Y Lu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The amendment and written response filed on June 19, 2003 has been entered.
2. Claim 14 has been added.
3. Claims 1-14 are pending.

Response to Arguments

4. Applicant's arguments filed on June 19, 2003 have been fully considered but they are not persuasive.

The Tanabe Reference:

Applicant argues Tanabe says nothing and suggests nothing about having a pendant that can be used for teaching/control of a robot and/or teaching an image processing system, and that displays an image supplied by a camera, as in the claimed invention. In addition, applicant argues Tanabe discusses nothing about and does not mention at all converting an image into a gray scale image or taking images from a camera or image processing operations with a camera image or processing intermediate images resulting from a camera image. Tanabe does not discuss the integration of a display concerned with robot manipulation and robot operational programming or a display concerned with image processing and manipulation of image processing, as is the case with the present claimed invention.

Upon further review of specification, and in light of applicant's arguments, the examiner respectfully disagrees for the following reasons. First of all, Tanabe does disclose a teaching pendant that contains a display unit for creating a program and displaying a state of the robot, column 3, lines 25-26. In addition, such teaching pendant includes functions necessary for robot

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teaching operations, column 3, lines 26-27. The examiner agrees Tanabe does not provide teachings of using camera to capture images, and display such images on the teaching pendant. However, as the examiner stated in office action mailed on 02/12/2003, the Jyumonji reference (U.S. Patent No. 5,987,591) is combined with the Tanabe reference to provide teachings of a camera mounted on the robot to capture images, and the images are sent to the robot controller after image processing. The motivation for combining Tanabe and Jyumonji is Tanabe in several occasions points out that a teaching pendant is used to control the robot through a combination of robot controller 20 and personal computer 30, and such teaching pendant includes a display unit that is capable of displaying graphical information, e.g. "displaying a state of the robot", column 3, line 26, "the display unit 13 can display a large amount of information including not only character information, but also graphic information in an easy to see fashion", column 3, lines 53-55, "the teaching pendant 10 can be used as a usual display unit for the personal computer 30 to display a state of the robot, and the like", column 3, lines 64-65, all of these teachings suggest the teaching pendant in Tanabe is capable of displaying image signal data being fetched from personal computer 30 and robot controller 20 (see figure 1 for connection configuration). On the other hand, Jyumonji teaches a CCD camera is mounted on a robot, and image signal is converted into gray scale level in image processor 2 (Jyumonji: column 6, lines 34-39), and robot controller 1 is connected to the image processor through communication interface 210 (see figure 4 in Jyumonji). Since the teaching pendant in Tanabe is connected to a robot controller, and such teaching pendant is capable of displaying image data, Jyumonji at column 4, lines 46-50 suggests of capturing images for displaying purposes, the captured image data is processed in image processor 2, and such image processor is connected to robot controller 1 (please see figure 4 in

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Jyumonji), it would be an advantage for a person of ordinary skill in the art to display the captured image data as taught by Jyumonji in Tanabe's teaching pendant because displaying images on a teaching pendant instead of on a separate TV monitor enhances the operability and portability as Tanabe suggests at column 3, line 34-35.

Upon further review of specification, and in light of applicant's arguments, the examiner withdraws 35 U.S.C. 112 1st Paragraph rejection of Claims 1-8, 11-13.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanabe et al (U.S. Patent No. 5,705,906) in view of Jyumonji (U.S. Patent No. 5,987,591).

- a. As applied to claim 4, which is representative of claims 1, 2 and 8-10, Tanabe discloses a portable teaching pendant is connected to robot controller through a cable (Tanabe at column 3, lines 15-16, discloses a cable connecting the personal computer 30 to the teaching pendant 10 has a length of several meters. Personal computer 30 in combination with controller 20 in Tanabe corresponds to the claimed "controller"); and teaching pendant comprises a unit for generating or editing a robot program (Tanabe at column 3, lines 24-26, discloses the teaching pendant 10 can be used as a display unit for creating a program for the robot), a unit for operating the robot, and a display unit, and can display on the display unit

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the converted image (Tanabe at column 3, lines 25-28, discloses the teaching pendant 10 can display a state of the robot. A state of the robot contains the input data mentioned at column 3, lines 31. Such input data corresponds to the claimed "an image converted into the gray scale"), and comprises a unit used for manipulation for image processing (Tanabe at column 3, lines 26-27, discloses the teaching pendant 10 includes functions necessary for robot teaching operations); and display unit displays, indication for generating or editing of robot program and indication for manipulation of image processing, together with an image simultaneously (Tanabe, at column 3, lines 36-48, discloses since the liquid crystal display unit 13 of the teaching pendant 10 is also used as a display unit for the personal computer 30, an operating system... with a picture or icon expressing a function displayed on a screen. Note since such display unit can be used as an operating system, it inherently allows users to process multi-tasks simultaneously), or allows a user to select either a switching mode or a superposition mode (Tanabe at column 2, line 42, discloses a jog key switch 15. When it is used, the teaching pendant is operating under switching mode. When the crystal display unit 13 is used for creating program and displaying image data, the pendant is under superposition mode). Tanabe at column 2, lines 29-33, discloses a robot system includes a teaching pendant 10, a robot controller 20, and a personal computer 30, which are connected with each other, however a robot main body is not shown but is connected to the robot controller (note in conventional technology, a camera is mounted on the robot to obtain the image.

data, Tanabe assumes it is the case in his system, therefore, a step of obtaining image data is omitted. However, for the sake of clarity, examiner incorporates a secondary reference of Jyumonji to show such step exists because without such step, the teaching pendant would not be able to obtain the state of robot and input data at column 3, lines 30-31). Jyumonji discloses a unit for fetching an image from a camera (Jyumonji, at column 6, lines 34-35, discloses the camera interface 203 serves as input-output device for the CCD camera 30); memory which stores image data from the camera or intermediate image data obtained in a stage of image processing (Jyumonji, at column 6, lines 39, discloses the image memory 204); and a unit for converting image data from the camera, the image data from the camera stored in the memory, or intermediate data into a gray scale or a color scale (Jyumonji, at column 6, line 38, discloses the image taken is converted into gray scale). At the time the invention was made, it would have been obvious to show a robot system with a camera to obtain images, and display such images on the teaching pendant, because the teaching pendant in Tanabe is connected to a robot controller, such teaching pendant is capable of displaying image data, and Jyumonji at column 4, lines 46-50 suggests of capturing images for displaying purposes, and the captured image data is processed in image processor 2, and such image processor is connected with robot controller 1 (please see figure 4 in Jyumonji). It would be an advantage for a person of ordinary skill in the art to display the captured image data as taught by Jyumonji in Tanabe's teaching pendant since displaying images on a teaching pendant instead of on a separate

TV monitor enhances the operability and portability as Tanabe suggests at column 3, line 34-35.

- b. As applied to Claim 3, which is representative of claims 5 and 11, Tanabe discloses a unit for displaying and superposing geometric graphics on the image displayed on the display unit in accordance with the operation procedure of image processing and specifying an image processing with respect to the image (Tanabe at column 3, lines 40-44, discloses when a program of the robot is to be create, when a state of the robot is to be displayed or when a teaching operation is to be carried out, there can be constructed such an operation environment that operation is intuitively carried out in an easy to understand fashion with a picture or icon expression a function displayed on a screen. Note such picture corresponds to the claimed “geometric graphics”).
- c. As applied to Claim 6, which is representative of claims 12 and 13, Tanabe discloses a part of the operation unit of the teaching pendant is configured by a touch panel (Tanabe at column 2, line 42, discloses a touch panel 16).
- d. Referring to Claim 7, Tanabe discloses a unit for incorporating an instruction to process an image into a program of robot (Tanabe: column 3, lines 42-48).
- e. With regard to Claim 14, the only difference between Claim 14 and Claim 4 is Claim 14 calls for additional limitation of “an image processing unit used for image processing” which Jyumonji at column 6, line 8, teaches an image processor 2 is used to process the captured image data from the camera mounted on the robot.

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Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

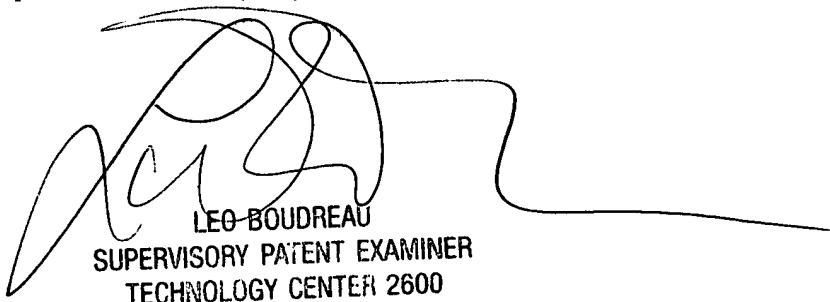
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom Y Lu whose telephone number is (703) 306-4057. The examiner can normally be reached on 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Tom Y. Lu


LEO BOUDREAU
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